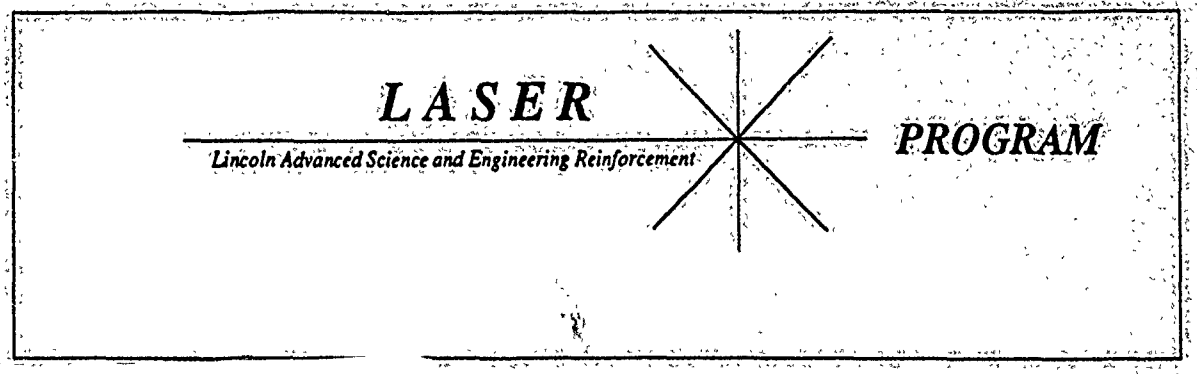

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1988-89
Technical Report
GRANT #N00014-83-G-1082
OFFICE OF NAVAL RESEARCH

Dr. Willie Williams
PHYSICS DEPARTMENT
(215) 932-8107)

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LASER

Lincoln Advanced Science and Engineering Reinforcement

PROGRAM

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INTRODUCTION

Lincoln University, under the Lincoln Advanced Science and Engineering Reinforcement (LASER) Program, has been actively identifying and recruiting minority students for careers in science and engineering since 1981. The program has successfully identified and recruited over 100 students for majors in technical fields. To date over 70% of these students have completed or will complete technical degrees in engineering, physics, chemistry and computer science. Of those completing the undergraduate degree over 40% have gone on to graduate and professional school.

Minority students completing their senior year of high school, who have demonstrated an aptitude and interest in engineering, science or related fields are invited to participate in the LASER Program. Starting the summer following graduation the students selected for the program begin their studies at Lincoln. During the following two years, students continue their course of study in basic science, engineering, mathematics, communications and liberal studies. The students have an opportunity to work in industries or laboratories as a summer intern or co-op student. Upon completing the two years of study engineering students transfer to an engineering school to complete their engineering degree, while science majors continue their studies at Lincoln.

The overall concept or model is successfully adding to the number of minorities completing undergraduate and graduate degrees in science and engineering. Since the program's inception in 1981, we have graduated 9 B.S. Engineers; 14 Physicists; 3 B.S. Chemists; 2 B.S. Mathematics Majors; 2 Computer Scientists; and 5 M.S. Scientists and Engineers. In addition, we expect to have 9 students in graduate school and over 40 students in undergraduate studies during this next academic year.

This success is attributable to well-planned approaches to student recruitment, training,

personal motivation, retention and program staff. Very closely coupled to the above factors is a focus designed to achieve excellence in program services and student performance. Like its acronym the LASER Program is a very narrowly focused project aimed at producing an excellent and outstanding group of young mem and women for careers in science, engineering, and related technical areas. Each student is hand picked based on high school performance, academic potential, natural ability, drive and motivation. Each student selected becomes a member of a select group that is expected to make a major contribution to the world of science, engineering, and related fields. Achievement and success in the LASER Program represents the collective efforts of LASER students, parents, staff, the Director, and other University officials, all striving for excellence. In fact, excellence in LASER can only come as a result of this collective effort. The achievement of excellence is the single most important goal that runs throughout the LASER Program. All activities, tasks, and specific objectives are set-up to achieve this excellence.

Future contributions by the LASER Program to the pool of technical minority graduates will have a significant impact. This is already evident from the success of the students that began the first year of the program. With program plans to refine many of the already successful techniques, follow-on activities are expected to make even greater contributions to the availability of technically trained minorities. For example, plans are already underway to enrich student training with undergraduate research exposure, broaden summer and co-op work experiences.

LASER is making a difference--a significant difference! With adequate support to maintain the high quality of services being delivered, LASER may prove to be the most significant undergraduate minority effort in the greater Delaware Valley.

The purpose of this proposal is to seek continuation funding of this effort. Under this funding we proposed to do the following:

1. Identify, recruit and train at least 20 new students annually through a summer bridge program for potential careers in science and engineering;

2. To continue, as well as strengthen the existing training and preparation of the current students majoring in science and engineering; and

3. To strengthen the development of student interest in advanced degrees in science and engineering.

DESCRIPTION OF PROJECT

Lincoln University is the oldest predominantly Black liberal arts institution in the country. Located near Philadelphia, PA, the university offer a number of strong programs leading to degrees in the sciences and other professions. The Lincoln Advanced Science and Engineering Reinforcement (LASER) Program is the an attempt to increase the pool of available minority scientists and engineers. The concept and approach are outlined below.

GOALS AND OBJECTIVES

The LASER program is guided by two comprehensive goals that are described below.

GOAL 1: To seek out and identify future minority students to meet the future and present requirements of our technical society.

The hallmark of LASER over the years has been an ability to understand the needs of students, and through the application of special aid and support; money; and technical skill devise means to assist these young men and women to become successful, particularly in their technical careers.

GOAL 2: To help students achieve success, particularly in technical careers, by providing opportunities for advancement based on their academic performance; and recognizing their individual achievements; and to insure the personal satisfaction that comes from a sense of accomplishment in their work.

One can take pride in the students and people in the LASER Program, their performance, their attitude toward their respective tasks and the Program. The LASER Program has been built around these individuals, the personal dignity of each, and the recognition of personal achievements.

The opportunity to share in the success of the LASER Program is evidenced in the higher than normal grades reported on LASER student transcripts, the large number of activities that are lead by these students, and by the LASER students many outstanding accomplishments.

The following objectives have been established in support of the above goals:

1. Identify and recruit annually 20 or more promising minorities for undergraduate science and engineering.
2. Train and prepare annually a pool of 40 or more talented minority undergraduates for technical careers and graduate schools.
3. Facilitate and encourage annually 10 or more talented minority students to complete advanced or terminal degrees in science and engineering.

These goals and objectives are consistent with the agency's interest in seeking to provide opportunities for minority youth and women in the study of science and engineering.

RATIONALE

The need for well trained scientists and engineers will continue to be in demand as our society becomes more and more technical. Minorities represent only a few percent of the total professionals in the Physical Sciences, Engineering, Mathematics, and related fields. Herein lies an untapped reservoir of talent and brain power to apply to the many technical issues and scientific problems faced by our nation.

The lack of minority representation in these fields are closely tied to the historical developments of Black people and the somewhat limited opportunities afforded minorities. Although the opportunities now exist for such preparation, the built-in biases and obstacles that now exist in their communities and society as a whole, requires that special attention be given to

minority students to motivate and encourage them to pursue careers in science and engineering. This special attention involves carefully identifying those students with potential to succeed as scientists and engineers. Secondly, creating a positive self-image, motivating these students and providing a strong support system is often required. Thirdly, these students need to be counseled and guided into the fields of science and engineering. This must be done through success oriented programs that develop their skills and potential to complete undergraduate and graduate degrees.

For large groups of minority students this does not happen in the normal course of events. A success oriented program, good facilities, a strong support system and dedicated faculty and staff are required. The combination of these ingredients lead to large numbers of minority graduates in science, engineering, mathematics and related fields at both the undergraduate and graduate levels.

SIGNIFICANCE OF APPROACH

This approach differs significantly in that initial students are closely screened while still in high school. Only those students with an interest in science and engineering, good academic skills and potential are selected. To further assure the likelihood of success, a strong monitoring and support system is used to ensure that each student is working up to nearly his full capacity.

We couple this with an environment that is conducive to success. The groups and classes are small, the faculty are hand picked and dedicated. The programs are first rate and the facilities are second to none. The program goals are simple and clear. Students are constantly motivated toward these goals by a built-in reward system that encourages outstanding performance and excellence.

To date, limited application of this approach has resulted in a two-fold increase in the number

of science and engineering majors in our programs. Perhaps more importantly, the process has resulted in the graduation of 15-20 technical majors per year with over 60% of that number going on for advanced studies.

APPROACH

The approach is a 3 phase program involving students, parents, high school faculty and staff; industry and agencies; undergraduate and graduate faculty. Phase 1 is the screening process over a six week to one year period in which determinations are made regarding students skills, abilities and career inclinations. Phase 2 addresses largely, reinforcement and development of skills and broadening of horizons. This is 2 1/2 to 3 years in length. The final phase is the development of a well prepared and skilled major in science, mathematics, engineering or other related fields.

During Phase 1, students are evaluated with the aid of high school faculty and staff, as potential candidates for the program. These candidates are further screened by our faculty and staff. From this evaluation a group of students are selected for our 10 week summer program. This program begins to test and reinforce student math and science skills. It provides extensive exposure to careers in science, math, engineering and related fields. By the end of Phase 1, both students and program faculty have a good assessment of each students potential for a career in science and engineering.

During Phase 2, students who have demonstrated the aptitude and desire to pursue the science and engineering tracks begin a program of normal college courses that build upon their basic science and math skills. Students begin to make final selections on majors and career paths. By the completion of this phase, students spend their summers working in technical areas supported by the sponsoring agency or similar agencies.

Following Phase 2, students begin their work leading to a B.S. degree in Physics, Chemistry, Math or Engineering. In the case of engineering students, they transfer to participating engineering school such as Drexel, University of Pittsburgh, Penn State, Lafayette, and New Jersey Institute of Technology to complete their degrees. For those remaining in the physical sciences, they receive advanced work in their respective major. This includes actual research and development work under the supervision of a faculty member. During their senior year, students are encouraged and assisted in applying to graduate school.

ORGANIZATION

The LASER Program is organized into four major efforts. The first of these involve the identification, recruitment, and training of minority students for careers in science and engineering. This represents the bulk of the effort to date. The second and equally important component of these efforts is the student reinforcement and retention activities. After careful analysis, the focus here is to provide the all important support system each student requires to be successful. The third component, which we are just beginning to build is the introduction of research and development experiences as well as exposures at national facilities like NASA, Fermi Lab, Stanford Accelerator Lab, Bell Labs, etc.

The final component of the Program tries to address the required facilities and equipment needed to maintain current, and when possible state-of-the-art experience and exposure to emerging science and engineering concepts. This is summarized in figure 1.

PROGRAM REQUIREMENTS

Basic requirements for inclusion and continuation in the program are as follows:

1. Strong academic potential as indicated by high school faculty and staff, high school transcript; tests, such as SAT's and specific placement tests; interview and other review panels.

2. Demonstrated interest in science and engineering.

3. Academic performance at or above 3.00 GPA overall and 2.70 in math and science courses.

4. Summer employment at a participating or selected company or agency.

5. Serious commitment to graduate or professional school.

ORGANIZATION CHART

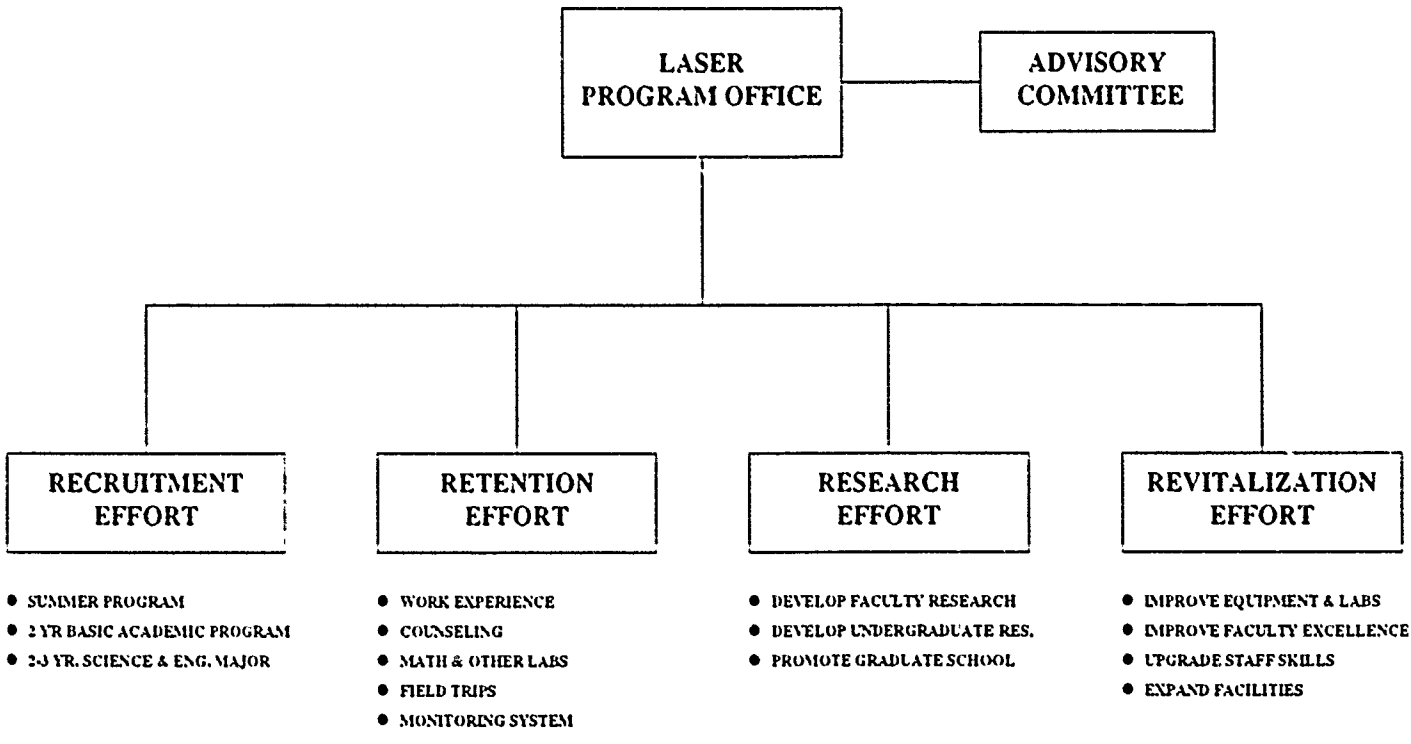

Figure 1. Funtional organization

PARTICIPANTS

We expect 20 new participants each year with a total of 60 at various stages of the program. These students will be recruited nationally. However major emphasis will be placed on students in the Greater Delaware Valley and surrounding communities as far South as Virginia and as far North as New York.

SIGNIFICANT RESULTS

The overall goal of the LASER Program is to improve students' interest in and ability to pursue a technically-oriented education that leads to a career (or at least a degree) in engineering or a related science field. Thus, the entire program has been designed and implemented to achieve that end. The significant accomplishments of the project are summarized under the headings listed below:

UNDERGRADUATE DEGREES AWARDED

The most significant results of this project is the number of technical graduates. The program has had 34 students complete degree programs. Of this total, over 90% completed degrees in one of several technical areas. Table 1 summarizes expected graduates for the 1988-89 academic year.

TABLE 1. EXPECTED 1989 UNDERGRADUATE DEGREES

Name	Major	School
Patricia Allen	Physics	Lincoln University
Darryl Camp	Commercial Art	Art Institute of Philadelphia
James Cooper	Chemistry	Lincoln University
Ronald Crawford	Physics	Lincoln University
Crystal Cubbage	Physics	Lincoln University
Brian Dorsey	Electrical Engineering	NJIT
Warren Green	Physics	Lincoln University
Deidre Hammond	Physics	Lincoln University
Mark Hill	Physics	Lincoln University
Tullettia Johnson	Physics	Lincoln University
David Lee	Physics	Lincoln University
Everett Love	Physics	Lincoln University
Newton Miller	Engineering	Penn State University
Andre Olden	Physics	Lincoln University
Enoch Rochester	Chemistry	Lincoln University
Timothy Thomas	Physics	Lincoln University
Fred Thompson	Physics	West Chester State University
Vance Williams	Physics	Lincoln University

The LASER concept is successfully adding to the number of minorities completing undergraduate degrees in science and engineering. By the close of the 1988-89 academic year, the program expects to have graduated 13 B.S. Engineers; 28 B.S. Physicists; 6 B.S. Chemists and 8 M.S. level scientists and engineers. Table 2 summarizes the degrees awarded to date.

TABLE 2. UNDERGRADUATE DEGREES COMPLETED

Name	Major	College
Todd Anderson	Physics	Lincoln University
Edwin Archer	Civil Engineering	Cornell University
Rohan Banton	Physics	Lincoln University
Yvette Bell	Physics	Lincoln University
Bernice Brogdon	Chemistry	Lincoln University
Harold Bryant	Chemistry	Lincoln University
Pierre Burno	Physics	Lincoln University
Harriet Burton	Business	Lincoln University
Charisse Carney	Physics	Lincoln University
Christyl Chamblee	Physics	Lincoln University
Kelvin Clark	Physics	Lincoln University
Dwayne Cole	Mechanical Engineering	Howard University
Francis Countiss	Physics	Lincoln University
Shawn Cubbage	Computer Science	Lincoln University
Erick Gass	Textile Engineering	Textile School of Engineering
Shevon Ivey	Mathematics	Lincoln University
Spencer Lane	Mechanical Engineering	Howard University
Edward Lawerence	Physics	Lincoln University
Cyd Hall	Actuarial Science	Lincoln University
Lyold Hammond	Chemistry	Lincoln University
Jaime Madera	Electrical Engineering	Drexel University
Paul McIntyre	Electrical Engineering	Capital Institute
Richard Neal	Engineering	U.S. Air Force
Timothy Moore	Psychology	Lincoln University
Venessa Parkinson	Chemical Engineering	Manhattan College
Vernell Pate	Business	Lincoln University
Rodney Ridley	Physics	Lincoln University
Richard Smith	Physics	Lincoln University
Patricia Stith	Physics	Lincoln University
Michael Sutton	Computer Science	Lincoln University
Fred Thompson	Physics	West Chester
Lori Thomas	Physics	Lincoln University
Thomas Ware	Math/computer Science	University of Pittsburgh
Karen White	Chemical Engineering	University of Pittsburgh

GRADUATE AND PROFESSIONAL PROGRAMS

Equally impressive has been the project's success in encouraging students to seek advanced degrees in a wide variety of areas. A total of 14 students have enrolled in some type of advanced studies. Of this total, 80% are completing degrees in one of several technical areas. Table 3 summarizes the various degree programs.

TABLE 3. GRADUATE AND PROFESSIONAL

Name	Major	College
Yvette Bell	M.S., Math	Atlanta University
Rohan Banton	M.S. Mechanical Engineering	Penn State
Harold Bryant*	M.S., Chemistry	Indiana University of Pennsylvania
Pierre Burno	M.S., Physics	Drexel University
Charisse Carney	Ph.D., Public Affairs	Harvard University
Christyl Chamblee	M.S. Electrical Engineering	Penn State
Kelvin Clark	M.S., Information Science	University of Pittsburgh
Rodney Ridley	M.S. Electrical Engineering	Penn State
Richard Smith	M.S., Information Science	University of Pittsburgh
Patricia Stitch*	M.S., Biomedical Engineering	Penn State
Lori Thomas*	M.S., Physics	Atlanta University
Bernice Brogan	Ph.D., Chemistry	University of Pittsburgh
Lloyd Hammond	Ph.D., Bio-Chemistry	Purdue University
Timothy Moore	M.S., Psychology	Howard University

* completed

During 1988, three (3) students were selected as recipients of national fellowships from the Office of Naval Research and Oakridge Associates. Yvette Bell and Octivia Blount received ONR Fellowships that year, while Lori Thomas and Yvette Bell received Oakridge Fellowships.

PARTICIPANTS

The program is expecting to have over 40 participants in either Phase 2 or Phase 3 this academic year. Ten (10) of these participants are currently completing degrees at other colleges.

These are summarized in Table 4.

TABLE 4. 1987 Participants (Other School)

Name	School	Major
Ronald Al-Uqdah	Rutgers	Marketing
Yvette Scott	Delaware	Mechanical Engineering
Newton Miller	Penn State	Aerospace Engineering
Brian Dorsey	NJIT	Electrical Engineering
Cathy Bryant	Pratt Institute	Electrical Engineering
Audra Woodley	Drexel	Electrical Engineering
Deborah Bryant	Delaware	Industrial Engineering
Shawn Powell	Howard	Law
Rosalind Steptoe	Drexel	Electrical Engineering
Devon Bryant		Electrical Engineering

In addition to the above students, a large number of students will be completing their studies at Lincoln. The following Table list all participants enrolled this Fall.

TABLE 5. 1987 PARTICIPANTS (Lincoln)

Name	Major	Name	Major
John Anderson	Engineering	Paul DaCosta	Physics
Michael Bailey	Education	Warren Green	Physics
Stephen Belo	Engineering	Deidre Hammond	Physics
Mark Hill	Physics	Audrey Anderson	Physics
Gwendolyn Brown	Chemistry	Tullettia Johnson	Physics
Melissa Brown	Engineering	David Lee	Physics
Deaneara Campbell	Engineering	Everett Love	Physics
Randolph Lucas	Engineering	Andre Olden	Engineering
Enoch Rochester	Chemistry	Desiree' Carr	Physics
Timothy Thomas	Physics	Melissa Chisholm	Engineering
Vance Williams	Physics	Stephen Jones	Physics
Ronald Crawford	Physics	Dwayne Branch	Engineering
Crystal Cubbage	Physics	Michael Canty	Engineering
Nicole Brown	Chemistry	Xiomara Elliott	Engineering
Bernard Chatman	Engineering	Kendall Hayman	Engineering
Kimberley McCullough	Engineering	Carolyn Lamb	Engineering
David Hopkins	Engineering	Angela Page	Engineering
James Cooper	Chemistry	Mattilyn Rochester	Chemistry
Robert Payne	Chemistry	David Weaver	Engineering
Alaine Rogers	Engineering	Lavonne Carson	Engineering
Thomas Lewis	Engineering	Sharanda Mitchell	Engineering
Luqman Mahmud	Engineering	Danelle Nelson	Engineering
Janine Nelson	Engineering	Bony Op	Physics
Zara Sadler	Mathematics	Deirdra Smith	Engineering
LaBonnie Wise	Engineering		

PRE-COLLEGE PROGRAM

In response to the identified needs of the project, the Science and Mathematics Division has launched a pre-college program at the University's Urban Campus in Philadelphia. When fully operational over 100 7th - 12th graders will be provided with meaningful science and engineering experiences and training. As a part of the pre-college effort, a science and engineering training workshop will be sponsored on the main campus for middle and high school counselors and science and math teachers each year. support for this effort has been made possible through grants from the Howard Hughes Foundation, Bell of PA, William Penn Foundation, and the university.

NEW LASER EFFORT FOR BIOLOGY

In response to the LASER success with students in the physical sciences and engineering, a new Laser-type effort has been undertaken for those students interested in the biological sciences. Under this effort potential biology majors will be identified, recruited, and trained using the Laser model. Instead of the existing curriculum for physical scientists and engineers, a special biological curriculum will be followed by these students. This effort has been made possible through a grant from the Howard Hughes Foundation. With this addition, students from all majors in the Science and Mathematics Division have an opportunity to benefit from the LASER experience.

SUMMER EXPERIENCES

Laser students continued to take an active part in summer programs at various agencies and companies around the country. A number of students worked for such places as: The Army Corp of Engineers, OakRidge Laboratories, NASA, and the Temple Physics Department. One student of particular note, James Cooper, had an opportunity to work at the Penn State Materials Research Laboratory. This summer measured a major milestone for him. He, along with other co-workers were the first in this country to synthesize diamonds--an extremely notable accomplishment for an undergraduate.

ON-CAMPUS RESEARCH OPPORTUNITIES

Undergraduate students' involvement with faculty research continued to be a major theme. Several students were involved in the very successful 3-year ONR research effort on Semi-Conductor Etchants under the direction of Professor Irvin Heard. Although this work concluded early this fall, other research efforts continue to involve other students in faculty research. Three such externally funded projects are currently underway with support from NSF, EPA, and Howard Hughes Foundation that involves up to 10 students. Other faculty research projects that are pending includ: proposals to ONR, NASA, NSF, and NIH.

STUDENT RECRUITMENT AND RETENTION

A very successful approach to the identification and retention of students in technical majors has been developed. The efforts have identified and recruited over 100 students. Over 70% of these students have completed or will complete degrees in science and engineering majors. The success of the approach is attributable to a basic process that combines a highly structures reinforcement system with a very supportive environment. The expectations and requirements of obtaining a technical degree are established for the student. Clear and high expectations are set. The student learns how and why he must discipline himself. The supportive environment is achieved through people. Great care is taken in selecting the people that provide the services in the program. These individuals have to be dedicated and sensitive to the needs of the students. Tables 6 and 7 provide data on the overall program success.

The LASER students' performance is not just a local phenomenon in light of their success in national competition for scholarships and summer experiences. These students have been able to successfully compete for positions at Fermi Labs, Stanford, Bell Labs, etc. As another example, five (5) of these students have won the coveted OakRidge Undergraduate Fellowship and two (2) the Minority Access to Research Careers (MARC) Fellowships.

TABLE 6. Student Status

Group #	Year	Technical Major	Non-technical Major	Military	Drop-out	Unknown	Total
I	1981-82	13	3	1	2	1	20
II	1982-83	5	2	2	1	4	14
III	1983-84	6	-	-	2	1	9
IV	1984-85	14	1	-	4	-	19
V	1985-86	12	1	-	2	1	16
VI	1986-87	6	1	-	1	-	8
VII	1987-88	14	1	-	1	1	17
VIII	1988-89	16	-	-	-	-	16
TOTAL		86	9	3	13	8	119

PLANS FOR NEXT YEAR

The plan for next year is to continue the basic program by recruiting an additional 20 students, while continuing to support those students already in the program. Specific objectives include the following:

1. High school visits to discuss careers in science and engineering;
2. Workshop for high school science and math teachers on careers in science and engineering;
3. Seminars and field trips that promote science and engineering careers;
4. Development of summer and co-op jobs that provide students with hands-on experiences in science and engineering;

TABLE 7. LASER PARTICIPANTS STATUS (RETENTION/TRANSFERS/GRADUATION)

Year	#	Number of Students Retained With Years Since Entry						Trans	Eng	Tech	Non	Grad
		1	2	3	4	5	6					
1981-82	20	20 (110%)	17 (85%)	9 (45%)	6 (30%)	1 (5%)	0	6 (30%)	5 (25%)	14 (70%)	3 (15%)	5 (25%)
1982-83	14	10 (71%)	5 (36%)	5 (36%)	4 (29%)	1 (7%)	0	5 (36%)	4 (29%)	8 (57%)	1 (7%)	2 (14%)
1983-84	9	9 (100%)	8 (89%)	6 (67%)	4 (44%)	3 (33%)	0	1 (11%)	1 (11%)	7 (78%)	0	0
1984-85	19	18 (95%)	18 (95%)	18 (95%)	10 (53%)	5 (26%)		3 (16%)	2 (11%)	14 (74%)	0	6 (32%)
1985-86	16	16 (100%)	14 (88%)	11 (69%)	8 (50%)		6 (30%)	4 (25%)	5 (31%)	1 (6%)	0	
1986-87	8	8 (100%)	8 (100%)	7 (88%)								
1987-88	17	16 (94%)	16 (94%)									
1988-89	15	14 (93%)										

Trans represents the # of students that have transfered.
Eng represents the # of students that are Engineering graduates or presisting.
Tech represents the # of students that are Technical graduates or presisting.
Non represents the # of students that are Non-technical graduates or presisting.
Grad represents the # of students that are in graduate school

5. Development of undergraduate research activities as a part of on-going faculty research; and

6. Development of an expanded support base for the program.

TABLE 8. 1989 REQUESTED BUDGET

ACTIVITIES	AMOUNTS	TOTALS
SUMMER PROGRAM		**$40,000**
20 Students		
Tuition & General Fees & Subsistence	$25,000	
Books & Field Trips	2,000	
Proctors, tutors, RA's, etc.	10,000	
Stipends	2,000	
Student Projects & Act.	1,000	
Sub-total	$40,000	
ACADEMIC PROGRAM		**$35,500**
Tuition & General Fees & Subsistence	$30,000	
Books & Field Trips	2,000	
Proctors, Tutors, RA's etc.	500	
Stipends	2,000	
Student Projects & Act.	1,000	
Sub-total	$35,500	
PERSONNEL		**$17,000**
Project Director	$ 1,500	
Secretary/Admin. Assist.	12,100	
Fringe Benifits(24.93%)	3,400	
Sub-total	$17,000	
ADMINISTRATION		**$7,500**
Travel	$ 1,000	
Communications	2,000	
Materals & Supplies	1,500	
Brochures & Public Rel.	3,000	
Sub-total	$7,500	
Grand Total		**$100,000**

TABLE 9. PROPOSED BUDGET 1990, 1991, 1992

	JAN 1 1990		JAN 1 1991		JAN 1 1992	
SUMMER PROGRAM 20 Students		$78,960		$78,960		$78,960
Tuition & General Fees	$36,000		$36,000		$36,000	
Subsistence	24,000		24,000		24,000	
Books & Field Trips	2,220		2,220		2,220	
Proctors, Tutors, RA's, etc.	12,500		12,500		12,500	
Stipends	2,000		2,000		2,000	
Student Projects & Act.	2,260		2,260		2,260	
Sub-total	$78,960		$78,960		$78,960	
ACADEMIC PROGRAM		$60,500		$60,500		$60,500
Tuition & General Fees	$32,000		$32,000		$32,000	
Subsistence	16,000		16,000		16,000	
Books & Field Trips	4,400		4,400		4,400	
Proctors, Tutors, RA's etc.	2,500		2,500		2,500	
Stipends	3,200		3,200		3,200	
Student Projects & Act.	2,900		2,900		2,900	
Sub-total	$60,500		$60,5000		$60,500	
PERSONNEL		$64,339		$64,339		$64,339
Project Director	$ 8,000		$ 8,000		$ 8,000	
Secretary/Admin. Assist.	18,500		18,500		18,500	
Counselor/Monitor	25,000		25,000		25,000	
Fringe Benefits(24.93%)	12,839		12,839		12,839	
Sub-total	$64,339	$64,339		$64,339		
ADMINISTRATION		$17,620		$17,620		$17,620
Travel	$ 3,100		$ 3,100		$ 3,100	
Communications	3,500		3,500		3,500	
Materials & Supplies	2,520		2,520		2,520	
Brochures & Public Rel.	8,500		8,500		8,500	
Sub-total	$17,620		$17,620		$17,620	
Total		$221,419		$221,419		$221,419